

IN THE CLAIMS:

21 *Sub B1*
1. (Amended) A method of optimizing the topology of [the IEEE 1394] a serial bus having a plurality of nodes each with communication ports, comprising the steps of:
prioritizing said nodes according to the number of said ports and the transmission speed of said nodes;
connecting a non-used port of the node of the [first] lowest priority with a port of the node of the [second] next priority; and
repeating the [previous] connecting step until all of said nodes are connected together, whereby said nodes are connected through said ports according to priority order.

Sub B2
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3. (Amended) A method of optimizing the topology of [the IEEE 1394] a serial bus having a plurality of nodes each with communication ports, comprising the steps of:
comparing the total port number of all of said nodes with a reference value varying with the number (N) of said nodes to determine whether the prerequisite for constructing said topology is satisfied;
prioritizing said nodes according to the number of said ports and the transmission speed of said nodes when said prerequisite is satisfied;
connecting a non-used port of the node of the [first] lowest priority with a port of the node of the [second] next priority;
repeating the [previous] connecting step until all of said nodes are connected together; and
separating the last connected node to assign to the node of the foremost priority among the next speed group higher priority than the separated node when no port remains